AMERICAN MUSEUM NOVITATES

Number 665 — Published by THE AMERICAN MUSEUM OF NATURAL HISTORY New York City — Oct. 5, 1933

59.88,1 N (9)

BIRDS COLLECTED DURING THE WHITNEY SOUTH SEA EXPEDITION. XXVI[1]

NOTES ON *NEOLALAGE BANKSIANA* (GRAY)

BY ERNST MAYR

A study of *Neolalage banksiana* (Gray), undertaken as a continuation in the series of revisions of Polynesian genera of birds, has resulted not only in clearing up some doubtful points concerning the taxonomic position of this species, its geographical variation and distribution, but also has led to an investigation of certain variations of plumages and to a discussion of the physiology of feathers. In consideration of the divergence between the taxonomic investigation and the study of the physiology of feathers, I have decided to devote a separate paper to the latter subject. I am indebted to Mr. John T. Zimmer for much valuable assistance in the study of this genus.

NEOLALAGE Mathews

Neolalage MATHEWS, 1928 (Oct. 30), Bull. Brit. Orn. Club, XLIX, p. 19, new name for

Pseudolalage MATHEWS, 1928 (July 31), Nov. Zool., XXXIV, p. 372 (*nec* Blyth, 1861). Type (by original designation): *Lalage banksiana* Gray.

GENERIC CHARACTERS.—Bill (from forehead) almost as long as head, narrow and laterally compressed, but slightly depressed at base; higher than wide at the nostrils; culmen ridged and somewhat curved, lower mandible near tip also ridged; tip of maxilla strongly uncinate with a subterminal notch; nostril circular, not operculate, exposed or just slightly covered with short, weak bristles; feathering of forehead covering the base of the bill and reaching the posterior margin of the nostrils; length of the whole bill (from base) slightly shorter than tarsus; rictal bristles well developed, but not very strong; tarsus scutellate, scutellae large; length of tarsus slightly more than one-fourth of wing; wing moderately pointed; first primary relatively long, longer than half of second; fifth primary longest, or fourth and fifth subequal; usual wing formula 5>4>6>3>7>8>9>10>2; tail-feathers twelve; tail distinctly rounded, the lateral tail-feathers being shorter than the central ones; length of tail about four-fifths of wing; plumage compact, feathers of forehead and lores short and stiff; sexual dimorphism very slight, almost unnoticeable, except for the average smaller size of the females; juvenal plumage not spotted.

[1]Previous papers in this series comprise American Museum Novitates, Nos. 115, 124, 149, 322, 337, 350, 356, 364, 365, 370, 419, 469, 486, 488, 489, 502, 504, 516, 520, 522, 531, 590, 609, 628, and 651.

Neolalage banksiana was originally described as a species of *Lalage*. The shape of the bill and the color pattern suggest this classification, but on the other hand, as Ramsay says with good reason, this bird is not at all a *Lalage*. A close study of the species led me to the conclusion that Ramsay was not far off in considering it a species of the genus *Monarcha* (*Piezorhynchus*). However as close as *banksiana* may be to the other species of *Monarcha*, the bill is not that of a *Monarcha*. It is a narrow bill, higher than broad on the base. I realize that the shape of the bill is not of such a high generic value as it is usually considered, but the separation of *banksiana* from *Monarcha* is supported by several other characters as described above. In many aspects the bird resembles *Pomareopsis brujni* from New Guinea. Considering all the evidence, it appears to be justified to found on *banksiana* a distinct genus which was named *Neolalage* by Mathews in complete ignorance of the real relationship.

Neolalage banksiana (Gray)

Lalage Banksiana G. R. Gray, 1870 (May), Ann. Mag. Nat. Hist., (4) V, p. 329, Vanua Lava, Banks Islands.

Piezorhynchus sericeus Ramsay, 1888 (or ? 1889), Proc. Linn. Soc. N. S. W., XIII (2 Ser., Vol. III), p. 1293, Espiritu Santo, New Hebrides.

Lalage flavotincta Sharpe, 1899 (Dec. 30), Bull. Brit. Orn. Club, X, p. 28 (cf. Ibis, 1900, p. 342, 364), Espiritu Santo, New Hebrides.

Adult Male.—Lores, sides of head, sides of neck, chin, and upper throat white; forehead, crown, hind neck, scapulars, and back black with a slight bluish gloss; narrow band across the lower throat black; breast, abdomen, and under tail-coverts buffy white, in very fresh plumage deep orange buff; primaries and primary-coverts black, upper wing-coverts, tertials, and innermost secondaries more or less white; under wing-coverts, axillaries and inner edges of wing-feathers buffy white; lower rump and upper tail-coverts buffy white (with a few blackish feathers mixed in); central pair of tail-feathers black with small triangular shaped white tip; amount of white on the tail-feathers increasing until the outermost tail-feather is almost entirely white with the black reduced to the lower two-thirds of the outer web and a small area on the inner web.

Iris brown, bill black, feet dark gray.

Adult Female.—Very similar to adult male, but smaller; whitish feathers on throat shorter and with broader grayish bases, particularly near the chin; black of upperside frequently duller; white areas on wing reduced; black spot on seventh secondary much larger, in some cases even the eighth secondary with an extended black spot along the shaft.

Immature (typical).[1]—Somewhat similar to adult, but all colors less pure and less intense. Crown dark gray, back grayish olive-brown; white on throat and sides of head less pure, gray bases of the feathers more pronounced; band across lower

[1]For further details see American Museum Novitates, No. 666.

throat grayish; breast, abdomen and under tail-coverts deep buff; wing-feathers brown, primaries with clay-colored, secondaries with buffy edges; median and greater upper wing-coverts, with buffy white tips; tail-feathers brown, buffy white tips much reduced in size as compared with adult; bill yellowish.

NESTLING.—The collection contains no specimen in the actual nestling plumage, but several that are molting from the nestling to the first year plumage. From these we can reconstruct the nestling plumage as follows: entire body covered by soft downy feathers which are white on breast and abdomen, and cinnamon to rufous on the upper parts; primary-coverts, greater upper wing-coverts, wing-feathers and tail-feathers are the first feathers of the first year plumage to be acquired.

		WING	TAIL
Efate	7 ♂ ad.	76–81 (79.3)	61–63 (61.8)
Epi	3 ♂ ad.	79–80 (79.3)	63–65 (64.3)
Santo	12 ♂ ad.	74–80 (77.2)	59–65 (62.6)
Vanua Lava	4 ♂ ad.	75–78 (76.2)	58–62 (60.2)
Efate	7 ♀ ad.	73–78 (75.1)	57–64 (59.9)
Epi	3 ♀ ad.	74–78 (76.0)	62–63 (62.7)
Santo	1 ♀ ad.	78	
Vanua Lava	3 ♀ ad.	70–76 (73.3)	57–61 (58.7)

RANGE.—New Hebrides (Efate, Epi, Ambrym, Aurora, Pentecost, Aoba, Malekula, Malo and Santo) and Banks Islands (Vanua Lava).

Specimens were collected between June 1926 and January 1927. Plumage condition, size of gonads, and the study of the immature birds provide sufficient evidence for the statement that the whole life cycle in this species is about one month later than in *Myiagra vanikorensis* of Fiji (see Amer. Mus. Novit., No. 651, pp. 12–14).

FADING IN *Neolalage*

This species is very apt to fade (especially in its orange-buff colors) not only during the progress of the season, but also in the museum collections.

Specimens collected from June to August have a rich orange-buff on breast and abdomen, specimens from November are much paler, and those collected in January are almost whitish underneath. This is well demonstrated by the material of the Whitney South Sea Expedition, which was collected during one year (June 1926–January 1927). On the other hand the material of the British Museum (examined in 1932) reveals that the process of fading goes on even in dark museum cabinets. The types of *banksiana* (collected on Vanua Lava in 1865) are now almost whitish underneath, the types of Sharpe's *flavocincta* (collected on Santo and Malekula in 1899) are very pale yellowish buff, while three new skins (collected on Santo in 1927 by Baker) are rich orange-buff.

The possibility of fading was considered neither by Ramsay nor by Sharpe when, independently, they separated the Santo birds from typical Banks Islands birds, with the following curious result. Ramsay, who evidently had a very faded specimen, says that his Santo specimen differs from *banksiana* by being pure white underneath and not buffy white, while Sharpe on the contrary, having fresh birds (June–August) from Santo, separates them from *banksiana* as being "of a beautiful yellow instead of white" (Ibis, 1900, p. 342) underneath. However, he is greatly puzzled by the fact that Efate birds are as whitish as Banks Islands specimens, which does not fit with the geographical distribution.

The realization of the fading of the buffy colors in this species clears up all these difficulties.

Geographical Variation in *Neolalage*

We find in *Neolalage banksiana*, just as in many other species of island birds, a slight geographical variation, which can not be expressed in taxonomic terms. However, it may be interesting and useful to point out the slight differences existing between birds from various islands of the range. Sharpe separated the Santo bird from the Vanua Lava birds as being more yellowish, but this is not true, as I have just pointed out. Ramsay lists a series of differences, but not one holds true. He says that his *sericea* from Santo differs from *banksiana* "in having black bases to the upper tail-coverts [so does *banksiana*!], in having no distinct eyebrow [not true!], in having the white of the throat extending round the hindneck [not true!], the narrow pectoral band joining the interscapular region [also in *banksiana*]." However, the birds from Malekula, Malo and Santo undoubtedly have the white marks on wing and tail larger than those of the birds from the other islands, a fact which is demonstrated in the following table:

a	*b*	*c*	*d*	*e*	*f*
Aurora	2	10, 13 (11.5)	4, 5 (4.5)	100	0
Efate	7	13–16 (14.3)	7–12 (8.4)	100	0
Pentecost	2	13, 15 (14.0)	7, 11 (9.0)	100	0
Aoba	4	15–17 (15.7)	8–11 (9.2)	50	0
Epi	3	14, 19 (16.5)	9–11 (10.0)	66⅔	0
Vanua Lava	4	16–18 (17.5)	8–10 (8.5)	25	0
Malekula	12	13–20 (16.5)	12–17 (13.7)	75	42
Santo	9	14–21 (16.3)	15–22 (17.7)	33⅓	20
Malo	5	14–23 (18.8)	17–23 (20.0)	60	20

a = Locality
b = Number of adult males examined
c = Extension of white along the shaft on the outer web of the outermost tail-feather; measured in millimeters
d = Extension of white along the shaft on the inner web of the central tail-feather; measured in millimeters
e = Percentage of specimens showing the presence of black on the seventh secondary
f = Percentage of specimens showing the presence of white on the alula

This table shows that the amount of white in wing and tail is lowest in birds from Aurora, and highest in those from Malo, but that there is a gradual intergradation between them. Birds from Malekula, Malo, and Santo have somewhat more white than birds from all the other islands, but it seems inadvisable to separate them subspecifically on such a slight character, particularly as these three islands are right in the middle of the New Hebrides chain.

Going from the north (Vanua Lava) toward the south (Epi and Efate) there is a slight increase in size (see table, p. 3), but there is a great deal of overlapping.